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REPORT ON THE SCHOOL OF BOTANY.

SUBMITTED TO THE DIRECTORS, JUNE 3, 1890.

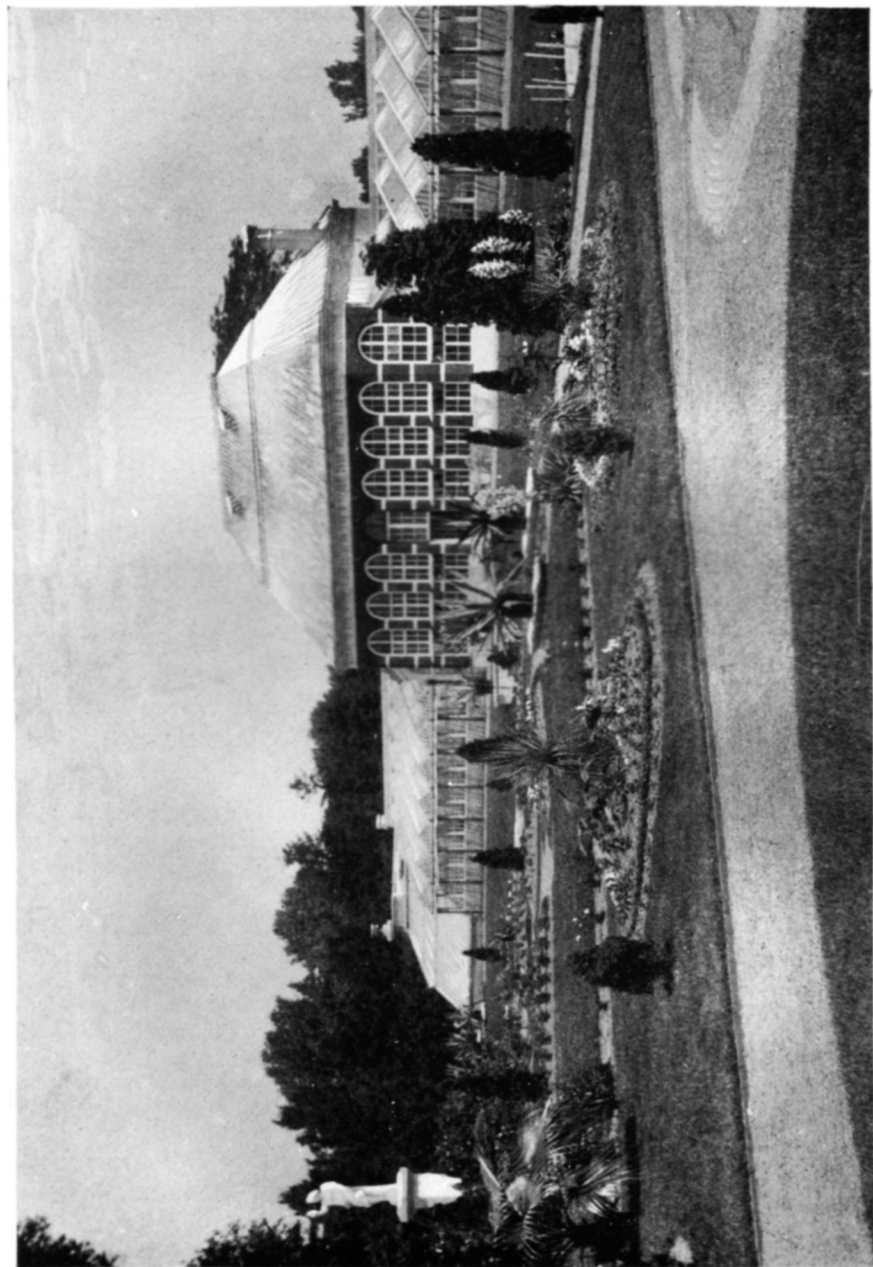
*To the Acting Chancellor
of Washington University:*

In completing the fifth year's work of the School of Botany established by the late Henry Shaw, it has seemed to me wise to submit to you the following report and suggestions concerning the School, for presentation to the Board of Directors of the University.

Established in June, 1885, the School of Botany was at once placed under my direction by the late Chancellor of the University, and formally opened on the 6th of November following, by inaugural addresses by the Chancellor and myself.

During the five years since its organization, the School of Botany has supplemented the Undergraduate Department of the University by giving to matriculated students such instruction in botany as could be arranged for, either as required studies or electives in the regular courses of study prescribed by the University Faculty. Until the present year, when an unusual amount of work has made it necessary for me to assign one elective to an assistant, this instruction has been given entirely by myself. The amount of time which it has been found practicable to spare for such work from the undergraduate courses has necessarily been small, and the maximum that has yet proved feasible with undergraduate students, consists in two exercises per week, continued through the Junior and Senior years.

This has made it possible to arrange classes for persons wishing to do work in botany, but not connected with the Undergraduate Department of the University; and the



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inauguration of the School of Botany was followed by the immediate organization of a class for the study of grasses. Similar classes in one or more lines of botanical study have been formed in the fall and spring terms of each succeeding year. None of these classes has been large. Sometimes only one or two persons have presented themselves for a given course. But it has been thought best to proceed with even very small classes when there was an earnest desire on the part of applicants to do such work as lay within the scope of the school; and a standing announcement is made in the catalogue of the University, that classes for either day or night work will be formed in any branch that can be taught with profit, on the application of six persons. Frequently, however, as has been said, classes are organized for a smaller number than this.

In 1888, largely through the interest of Drs. W. T. Porter and A. N. Ravold, a class of young physicians residing in the city, was formed for the study of bacteria in their connection with medical practice; and a portion of that summer was spent by me at the Berlin center for such work, where the necessary apparatus and cultures were obtained for the equipment of a bacteriological laboratory. This has been successfully operated for two winters, with evening classes; but the demand for such instruction is so small, and the medical schools of the city are now so well equipped for such work, that it has been decided to discontinue this elementary work for the present, although it is hoped that ultimately the School of Botany may afford opportunity for special research in this direction.

In addition to the work done with special laboratory classes, nearly all of which have been conducted by myself, two courses of evening lectures have been given in the lecture hall of the University, — one on the pollination of flowers, the other on the dissemination of plants. While the attendance was not large on either, a

gratifying degree of interest was manifested by those who were present.

In the performance of the necessary routine work of the School, and to a small extent in the instruction given to general classes, I have been very efficiently aided by Mr. L. H. Pammel, who spent nearly three years as my assistant, and was called to the chair of botany in the Iowa Agricultural College in the spring of 1889. Professor Wm. T. Porter, of the St. Louis Medical College, and Dr. A. N. Ravold, who has recently been given charge of the bacteriological work of the same institution, have given much gratuitous service in the bacteriological laboratory already referred to.

Owing to the limited income of the School of Botany for the past two years, and the necessity of soon meeting a considerable insurance premium payable on its endowment building, no effort has yet been made to fill the vacancy caused by the resignation of Mr. Pammel in 1889, such assistance as has been needed being given by Mr. A. S. Hitchcock, First Assistant at the Garden, who is detailed for partial service under direction of the Trustees of the Garden; but with the opening of the next college year, it is hoped that the school may once more claim the entire time of a competent assistant.

One of the most important features of the work of a University department is properly held to be original study; and the rather small amount of class-room work that has proved practicable in the School of Botany has permitted my assistant and myself to devote some time to such study. It was my good fortune to be associated with the late Professor Gray during the winters of 1885-6 and 1886-7, in editing the collected botanical writings of the late Dr. George Engelmann, published in an appropriate form by Mr. Shaw. During my stay in Cambridge for this purpose, opportunity was found for the study of certain groups of North American plants, and similar work has since occupied all of my leisure, and was pursued during one vacation

spent near several of the principal herbaria of Europe. The results of this work appear in a series of papers published in the Transactions of the St. Louis Academy of Science and the proceedings of other learned bodies, and the botanical press. During his connection with the School of Botany, Mr. Pammel was entrusted by the experiment station of Texas with some important field-work, which, I believe, was very satisfactorily performed, and has formed the basis of one or more official reports; and he also found opportunity to do several other pieces of good work, the results of which have been embodied in papers published by the Academy, and the botanical and agricultural press of the country.

Foreseeing that from time to time work of some interest might be expected from the School, I began in 1887 editing a series of "Contributions from the Shaw School of Botany," which are published in the Transactions of the Academy or elsewhere, and of which a limited number of separate copies are reserved, with the intention of issuing them to prominent botanical libraries when enough shall have appeared to make it desirable to bind them together in a single volume, thus ensuring their preservation and accessibility for use by specialists. Up to the present time six papers of this series have been printed, and others are in preparation.

Realizing very fully the slowness with which scientific work is accomplished, I feel that small as the results in this direction are, they are all that could reasonably have been anticipated; and the added facilities now offered by the Botanical Garden render it probable that in the future no small amount of useful work may be looked for from the instructors and advanced students of the School of Botany.

Owing to the lack of available accommodations at the Garden, where such provision ought to have been made, I was forced, on assuming charge of the School of Botany, to lay the foundation for a general herbarium at the laboratory of the School. This collection is based on the

remnants of my own phænogamic herbarium, presented to the School when I first came to St. Louis, to which have been added:—

The herbarium of the late Dr. O. Krause, of Jefferson City, found at the University addressed to me, but of the history of which diligent inquiry has revealed nothing. This includes, approximately, 2,000 specimens.

2. A set of New Zealand ferns, presented by Professor H. S. Pritchett.

3. A set of 161 Australian plants, presented by Baron von Mueller.

4. About 600 sheets of duplicate specimens from the herbarium of J. Gay, distributed from Kew, and obtained through the interest of Dr. Gray.

5. About 6,000 specimens from the duplicates of the Joad herbarium, likewise presented by Dr. Gray, and originally distributed from Kew.

6. A collection of some 400 Mexican plants made by Dr. Edward Palmer, and presented by him.

7. A partial set of Professor E. L. Greene's Santa Cruz Island plants, presented by the collector.

8. A set of Jamaican ferns, presented by Mr. J. Hart, now of the Royal Gardens of Trinidad.

9. About 200 Californian plants, presented by Mr. S. B. Parish.

10. A set of Howell's Oregon collection of 1887, purchased.

11. A set of Bailey's *Carex exsiccata*, purchased.

12. A collection of alpine plants, made by myself in Colorado in the summer of 1886.

13. About 6,000 sheets, being all that remains, of the original herbarium of the late S. B. Buckley, collected in the South Atlantic States, and purchased of the late Mrs. Rebecca Mann Dean, in whose possession it had been for many years.

14. About 700 specimens of Iowa plants, presented by Mr. A. S. Hitchcock.

15. Collections of smaller size, but often important, and

aggregating many hundred specimens, donated by L. H. Pammel, F. S. Earle, Prof. W. R. Dudley, Dr. Aug. Gattinger, C. W. Kempton, J. Q. A. Fritchey, Dr. George Vasey, the Secretary of Agriculture, Mrs. F. W. Wislizenus, Mrs. Katherine Brandegee, Dr. Chas. Mohr, Miss Frances Prince, Dr. J. Schneck, F. W. Anderson, the Director of the Kew Gardens, Dr. C. C. Parry, Mr. Edwin Harrison, M. Alfred Wesmael, Prof. S. M. Tracy, F. M. Boynton, Rev. A. B. Langlois, Prof. John Macoun, and many other correspondents.

This herbarium, now aggregating about 20,000 mounted sheets of flowering plants and ferns, is increased by some 4,000 numbers of cryptogams, including Von Thuemen's Mycotheca, Ravenel's own copies of his *Fungi Caroliniani* and *Fungi Americani*, several centuries of Berkeley's *British Fungi*, etc. As has been stated, it is a collection more properly maintained by the Garden than the School of Botany, and it is already far too valuable to be kept in so unsafe a building as that now devoted to the School of Botany. For these reasons, and in view of the very intimate relations established by their founder between the School of Botany and the Missouri Botanical Garden, and now cemented by the mutually helpful steps that have been taken by the Directors of the University, and the Trustees of the Garden, I would respectfully recommend that the Directors of the University authorize me to propose to the Board of Trustees of the Garden that this collection may be placed at the Garden as a nucleus for the important general herbarium to be accumulated there, on condition that the School of Botany be reimbursed for expenditures for paper, alcohol, etc., used in mounting the specimens properly. In making this recommendation, I feel that the best interests of science will be subserved by the proposed action, and that the School of Botany will always find the collection as accessible as though it were in its own possession, while the safety and general usefulness of the specimens will be greatly increased.

Should this recommendation be favorably acted on, and the proposed donation be accepted by the Trustees of the Garden, I propose in future to confine the energy of the School, in this direction, to the completion of its local herbarium, which now numbers some 1,600 sheets, and of an already considerable collection of woody plants in their winter condition, which is being formed as the basis of scientific work now under way at the School.

The instrumental and other equipment, and the exact nature of the educational work, of the School of Botany, are so fully indicated in the Annual Announcement of the School, and in my report for 1889 to the Trustees of the Botanical Garden,* that it is unnecessary to say anything on that subject in this place.

Respectfully submitted,

WM. TRELEASE,

Professor in Charge.

ST. LOUIS, MO., June 3, 1890.

The action recommended with reference to the general herbarium of the School, was unanimously taken by the Directors of the University, and their donation accepted by the Trustees of the Garden, so that the collections referred to are now the property of the Garden and located with its other herbaria.

* See page 99, *infra*.